

Corrigé du devoir de mathématiques

Exercice 1

$$a = \frac{2}{3} - \frac{1}{5} \times \frac{5}{\frac{2}{3}} = \frac{2}{3} - \frac{1}{5} \times \frac{5}{2} \times \frac{2}{3} = \frac{2}{3} - \frac{1}{3} = \frac{1}{3}$$

$$b = \frac{3x+2}{2x-3} - 1 = \frac{3x+2-(2x-3)}{2x-3} = \frac{x+5}{2x-3}$$

$$c = \frac{x-2}{2x-1} + \frac{2x+1}{x+2} = \frac{(x-2)(x+2) + (2x+1)(2x-1)}{(2x-1)(x+2)} = \frac{x^2-4+4x^2-1}{2x^2+3x-2} = \frac{5x^2-5}{2x^2+3x-2}$$

$$d = \frac{x + \frac{3}{2}}{x + \frac{1}{2}} - 1 = \frac{\frac{2x+3}{2}}{\frac{2x+1}{2}} - 1 = \frac{2x+3}{2} \times \frac{2}{2x+1} - 1 = \frac{2x+3}{2x+1} - \frac{2x+1}{2x+1} = \frac{2}{2x+1}$$

Exercice 2

$$A(x) = (x+3)(2x-1) + (x+3)(x+2) = (x+3)[(2x-1) + (x+2)] = (x+3)(3x+1)$$

$$B(x) = (2x+1)(3x+2) - (2x+1)(x+2) = (2x+1)[(3x+2) - (x+2)] = (2x+1)(2x) = 2x(2x+1)$$

$$C(x) = 3(2x+1) - (6x+1)(2x+1) = (2x+1)[3 - (6x+1)] = (2x+1)(-6x+2)$$

$$D(x) = (2x+1) + (x+2)(2x+1) = (2x+1)[1 + (x+2)] = (2x+1)(x+3)$$

$$E(x) = \frac{2(2x+1)}{x+3} - \frac{2x+1}{x+2} = (2x+1) \left[\frac{2}{x+3} - \frac{1}{x+2} \right] = (2x+1) \times \frac{x+1}{(x+3)(x+2)}$$

$$F(x) = (x+1)(x+2) - (x+2)^2 = (x+2)[(x+1) - (x+2)] = (x+2)(-1) = -(x+2)$$